

Appl. No. 10/807,210
Amdt. Dated Sep. 2, 2005
Reply to Office Action of Apr. 12, 2005

Remarks

Objection to the Disclosure

Applicant has amended the specification in order to overcome the objection, and respectfully requests that Examiner now withdraw the objection.

Claim Rejections under 35 U.S.C. 112

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has amended numerous of the claims and the specification in order to overcome the rejections, and respectfully requests that Examiner reconsider and withdraw the rejections.

Claim Rejections under 35 U.S.C. 103

Claims 1-4 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (US 4,544,571), in view of Gabower (US 6,570,085), optionally considering Motoki et al. (US 5,462,771). Claims 1-3 and 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller, in view of Marutsuka (US Publication. No. 2002/0071934 A1), and Motoki et al.

In response to these rejections, applicant has amended independent claim 1 by adding the limitation(s) of claim 8 therein, in order to patently define the claimed invention over the references cited by Examiner. Accordingly, applicant has canceled claim 8 without prejudice.

Applicant also has amended independent claim 10 by adding the limitation(s) of claim 8 therein, in order to patently define the claimed invention over the references cited by Examiner.

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Claim 1 now recites "[a] method for manufacturing an EMI-shielding (electromagnetic interference-shielding) assembly having a substrate, comprising the steps of: (a) providing oxygen plasma to clean the substrate; (b) ion plating the cleaned substrate with a layer of nickel or phosphorus nickel to form an adhesion layer; (c) ion plating the plated substrate with a metal shielding layer; and (d) ion plating the plated substrate with a corrosion-resistant layer.

In contrast, as shown in Fig. 2 and understood by applicant, Miller discloses a method of manufacturing an EMI/RFI shielding panel comprising "a step of vapor plating active surface with chromium or stainless steel to provide adhesive layer 11." Miller: abstract; col. 1, lines 45-54; col. 2, lines 32 & 53-65; col. 3, lines 1-25 & 50-56 (emphasis added). Therefore, Miller does not disclose or teach a method for manufacturing an electromagnetic interference shielding assembly having a substrate that comprises a step of "ion plating the cleaned substrate with a layer of nickel or phosphorus nickel to form an adhesion layer."

In addition, Gabower discloses an EMI shield that includes a polymeric substrate 25 having conductive metallization layers 27 and 29 applied thereto by vacuum metal deposition techniques. Each of the layers 27 and 29 is a relatively thick, thin film of metal, preferably of aluminum, copper, or silver (col. 5-col. 6). Therefore, Gabower does not disclose or teach a method for manufacturing an electromagnetic interference shielding assembly having a substrate that comprises a step of "ion plating the cleaned substrate with a layer of nickel or phosphorus nickel to form an adhesion layer."

Furthermore, as understood by applicant, Motoki et al. discloses a method of manufacturing electromagnetic wave shielding plastic molding, which comprises the step of providing a conductive layer comprising at least a metal selected from

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the group consisting of Al, Cu, Ni, Cr and Sn or an alloy thereof, by high-frequency excitation by plasma on the surface of a plastic molding without previously washing and without providing a primer coating layer (col. 2, lines 44-64). Therefore, Motoki et al. does not disclose or teach a method for manufacturing an electromagnetic interference shielding assembly having a substrate that comprises a step of "ion plating the cleaned substrate with a layer of nickel or phosphorus nickel to form an adhesion layer."

Moreover, as understood by applicant, Marutsuka discloses a transparent electromagnetic radiation shielding material which is provided with the adhesion of the layers thereon, such as a black layer/metallic layer (para. 0020). The metals composing the metallic layer include gold, silver, steel, or an alloy of these metals (para. 0036). Therefore, Marutsuka does not disclose or teach a method for manufacturing an electromagnetic interference shielding assembly having a substrate that comprises a step of "ion plating the cleaned substrate with a layer of nickel or phosphorus nickel to form an adhesion layer."

Therefore, none of Miller, Motoki et al., Gabower, and Marutsuka, whether taken alone or in combination, teach or suggest a method for manufacturing an electromagnetic interference shielding assembly having a substrate that comprises a step of "ion plating the cleaned substrate with a layer of nickel or phosphorus nickel to form an adhesion layer."

For at least the foregoing reasons, independent claim 1, as amended, is submitted to be patentable under 35 U.S.C. 103(a) over the cited references.

Accordingly, claims 2-4 and 6-9, and new claims 22-24, all of which depend from amended claim 1, are also submitted to be patentable.

Claim 10 now recites "[a] method for manufacturing an EMI- shielding

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(electromagnetic interference-shielding) assembly having a substrate, comprising the steps of: (a) cleaning the substrate; (b) ion plating the cleaned substrate with an adhesion layer made of nickel or phosphorus nickel; and (c) ion plating the plated substrate with a shielding layer made of a second metal material.

In contrast, as shown in Fig. 2 and understood by applicant, Miller discloses a method of manufacturing an EMI/RFI shielding panel comprising "a step of vapor plating an active surface with chromium or stainless steel to provide an adhesive layer 11." Miller: abstract; col. 1, lines 45-54; col. 2, lines 32 & 53-65; col. 3, lines 1-25 & 50-56 (emphasis added). Therefore, Miller does not disclose or teach a method for manufacturing an electromagnetic interference shielding assembly having a substrate that comprises a step of "ion plating the cleaned substrate with an adhesion layer made of nickel or phosphorus nickel."

In addition, Gabower discloses an EMI shield that includes a polymeric substrate 25 having conductive metallization layers 27 and 29 applied thereto by vacuum metal deposition techniques. Each of the layers 27 and 29 is a relatively thick, thin film of metal, preferably of aluminum, copper, or silver (col. 5-col. 6). Therefore, Gabower does not disclose or teach a method for manufacturing an electromagnetic interference shielding assembly having a substrate that comprises a step of "ion plating the cleaned substrate with an adhesion layer made of nickel or phosphorus nickel."

Furthermore, as understood by applicant, Motoki et al. discloses a method of manufacturing electromagnetic wave shielding plastic molding, which comprises the step of providing a conductive layer comprising at least a metal selected from the group consisting of Al, Cu, Ni, Cr and Sn or an alloy thereof, by high-frequency excitation by plasma on the surface of a plastic molding without previously

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washing and without providing a primer coating layer (col. 2, lines 44-64).

Therefore, Motoki et al. does not disclose or teach a method for manufacturing an electromagnetic interference shielding assembly having a substrate that comprises a step of "ion plating the cleaned substrate with an adhesion layer made of nickel or phosphorus nickel."

Moreover, as understood by applicant, Marutsuka discloses a transparent electromagnetic radiation shielding material which is provided with the adhesion of the layers thereon, such as a black layer/metallic layer (para. 0020). The metals composing the metallic layer include gold, silver, steel, or an alloy of these metals (para. 0036). Therefore, Marutsuka does not disclose or teach a method for manufacturing an electromagnetic interference shielding assembly having a substrate that comprises a step of "ion plating the cleaned substrate with an adhesion layer made of nickel or phosphorus nickel."

Therefore, none of Miller, Motoki et al., Gabower, and Marutsuka, whether taken alone or in combination, teach or suggest a method for manufacturing an electromagnetic interference shielding assembly having a substrate that comprises a step of "ion plating the cleaned substrate with an adhesion layer made of nickel or phosphorus nickel."

For at least the foregoing reasons, independent claim 10, as amended, is submitted to be patentable under 35 U.S.C. 103(a) over the cited references.

Accordingly, claims 11-13, which depend from amended claim 10, are also submitted to be patentable.

In view of the above claim amendments and remarks, the subject application is believed to be in a condition for allowance, and an action to such effect is earnestly solicited.

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Respectfully submitted,

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